

REMARKS/ARGUMENTS

Claims 1-39 are currently pending in this application.

The Office Action of September 21, 2006 has required election of a single disclosed species under 35 U.S.C. §121:

Claims 1, 4, 28, and 31 are allegedly generic to a plurality of disclosed, patentably distinct species comprising the primer blocking groups PO₄, a thio group, and a phosphorothiol group. The Office Action contends that the species are independent or distinct because they represent unique chemical entities. Applicants elect the primer blocking group PO₄, with traverse, for further examination on the merits.

Claims 1, 11, and 12 are allegedly generic to a plurality of disclosed, patentably distinct species comprising the modified bases of 8-oxoguanine, 8-oxoadenine, fapy-guanine, methyl-fapy-guanine, fapy-adenine, aflatoxin B1-fapy-guanine, 5-hydroxy cytosine, and 5-hydroxy-uracil. The Office Action states that the species are independent or distinct because they represent unique chemical entities. Applicants elect the modified base 5-hydroxy-uracil, with traverse, for further prosecution on the merits.

The MPEP sets forth two requirements for restriction to be proper. First, the claims must independent or distinct. Second, if the search and examination of all the claims in an application can be made without serious burden, the Examiner must examine them on the merits, even though they include claims to independent or distinct inventions (MPEP §803; emphasis added).

In particular, the Office Action has required an election of a single disclosed species recited in each of the Markush recitations of Claims 4 and 12. Claim 4 recites three members, a PO₄ group, a thio group, and a phosphorothiol group. Claim 12 recites eight members: 8-oxoguanine, 8-oxoadenine, fapy-guanine, methyl-fapy-guanine, fapy-adenine, aflatoxin B1-fapy-guanine, 5-hydroxy cytosine, and 5-hydroxy-uracil. If the members of the Markush group are sufficiently few in number or so closely related that a search and examination of the entire claim can be made without serious burden, the Examiner must examine all the members of the Markush group in the claim on the merits, even though they may be directed to independent and distinct inventions (MPEP §803.02).

It is improper for the Office to refuse to examine that which Applicants regard as their invention, unless the subject-matter in a claim lacks unity of invention. *In re Harnish*, 631 F.2d 716, 206 USPQ 300 (CCPA 1980); *Ex parte Hozumi*, 3 USPQ2d 1059 (Bd. Pat. App. & Int. 1984). Unity of invention exists where compounds included within a Markush group (1) share a common utility, and (2) share a substantial structural feature essential to that utility. In relation to the instantly claimed subject matter of Claim 4, all three of the compounds share a common utility as a chemical moiety on a sequencing primer that reversibly blocks polymerization of a nucleic acid by DNA polymerase. See, for example, page 4, paragraph [0040] of the published specification U.S. 20060134633. Furthermore, the number of species recited in Claim 4 are so few that it would not constitute an undue burden for the Examiner to search and examine all three of the compounds together.

In relation to the instantly claimed subject matter of Claim 12, the eight disclosed species each share a substantial structural feature, namely the presence of a nucleotide base. The eight modified bases all have a common utility related to their common structural feature, such as their incorporation into a nucleic acid molecule of interest, wherein the modified nucleotide can be deblocked by formamidopyrimidine-DNA glycosylase. See, for example, page 7, paragraph [0066] of U.S. 20060134633. In addition, the limited number of species recited in Claim 12 do not constitute an undue burden on the Examiner to search and examine all of the modified bases together.

Applicants contend that the claims of the present invention reflect a web of knowledge and continuity of effort that warrants examination of all disclosed species in a single application. Restriction has not been shown to be proper, especially in view of the limited number of species disclosed in the Markush recitations of Claims 4 and 12. Consequently, reconsideration and withdrawal of the species election requirement is respectfully requested.

CONCLUSION

Examination on the merits of the instant case is respectfully requested. If there are any questions regarding this Response, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,

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